CARY Audio Design

OWNER'S MANUAL

PH 302 MkII

Vacuum Tube Phono Preamplifier

NOTE: Before installing your new component, please read this manual carefully as it will inform you of the product specifications, proper installation and correct operating procedures for your unit. Also included in this manual are guidelines on how to service and care for your new Cary Audio Design product.

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WARNING: The triangle with the lightning flash symbol displayed on the unit advises the user of dangerous uninsulated voltage inside the product's enclosure.

CAUTION: To reduce the risk of electric shock, do not remove the cover. There are no user-serviceable parts inside; it is recommended that only qualified personnel service this component.

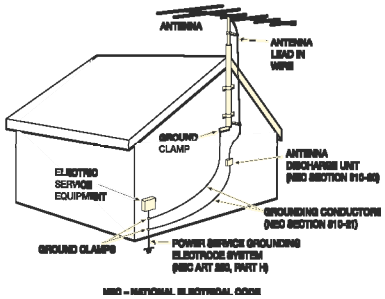
ALERT: The triangle with the exclamation point symbol on the component suggests that the owner refer to important operating and maintenance instructions in the owner's manual.

1. **OWNER'S MANUAL:** Before powering up the equipment, read all safety and operating instructions and follow them as instructed. Retain the safety and operating instructions for future reference.
2. **ATTACHMENTS:** Use only those attachments recommended by the unit manufacturer, as others may cause hazards.
3. **ACCESSORIES:** Do not place the unit on an unstable cart, stand, tripod, bracket, or table. The unit may fall, causing injury to a person or damage to the unit. Mount the unit according to the manufacturer's instructions with the suggested mounting accessory.
4. **WALL OR CEILING MOUNTING:** Mount the unit to a wall or ceiling only in the manner recommended by the manufacturer.
5. **WATER AND MOISTURE:** Do not use the unit near water (for example, near a swimming pool, bath tub, wash bowl, kitchen sink, or laundry tub) or in a damp environment (like a basement or outside in the rain).
6. **OBJECT AND LIQUID ENTRY:** Do not push objects of any kind into the unit through openings as they could touch dangerous voltage points and short-out parts, possibly resulting in a fire or electric shock. Avoid spilling liquid of any kind on the unit. If water or any metal object (such as a paper clip, coin, or staple) accidentally falls inside the unit, disconnect it from the AC power source immediately and contact Cary Audio Design for further instructions.
7. **HEAT:** Position the unit away from heat sources such as radiators, heat registers, stoves, or other units (including amplifiers) that produce heat.
8. **VENTILATION:** Slots and openings in the cabinet create ventilation to protect the component from overheating. These openings on the top and bottom panels must remain unobstructed. Allow at least six inches (16 cm.) of clearance above the unit and an opening behind the unit for airflow. Do not place the unit on a bed, sofa, rug, built-in bookcase, or rack without adequate ventilation.
9. **GROUNDING OR POLARIZATION:** As a safety feature, the unit may be equipped with a polarized alternating current line plug in which one blade is wider than the other. This plug will fit into the power outlet only one way. If you cannot insert the plug fully into the outlet, try reversing the plug. If the plug still will not fit, contact a licensed electrician to update your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
10. **POWER SOURCES:** Operate the unit only from the power source indicated on the marking label. If you are unsure of the type of power supplied to your home, consult your unit dealer or local power company.
11. **POWER CORD PROTECTION:** Arrange power supply cords so that they do not suffer from foot traffic or pinching by items placed on or against them. Pay close attention to cords where plugs enter the AC outlet and where they exit from the unit.
12. **LIGHTNING:** For added protection during a lightning storm or when the component is idle for long periods of time, unplug the unit from the wall outlet and disconnect the antenna or cable system. This will help protect the unit from lightning and power line surge damage.
13. **POWER LINES:** Do not locate an outside antenna system in the vicinity of overhead power lines or other electric light or power circuits. When installing an outside antenna system, take extreme care to avoid touching the power lines or circuits; contact with them could be fatal.
14. **OVERLOADING:** Do not overload wall outlets, extension cords, or integral convenience receptacles as this increases the risk of fire or electric shock.

15. **REPLACEMENT PARTS:** When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or those having the same characteristics as the original parts. Unauthorized substitutions may result in fire, electric shock or other hazards.
16. **SAFETY CHECK:** Upon completion of any service or repairs to the unit, ask the service technician to perform safety checks to ensure the unit is in proper operating condition.
17. **IMPORTANT SAFETY NOTE:**
    - Before connecting a new product such as the Cary Audio Design MS-1 to your audio or home theater system, turn off all other equipment (preferably unplugging them from the AC power source). Many audio components feature automatic turn-on circuits that may activate during an installation, potentially causing damage to electronic components or speakers. This type of damage is not covered by product warranties, and Cary Audio Design specifically disclaims responsibility for any such damage.
    - **Power Cord:** The removable power cord provided with your player was specifically designed for use with this product, but other AC cords may be used. Consult your dealer for advice on AC power cords and high quality wire in your system.

    - **AC Fuse:** The fuse is located inside the chassis and is not user serviceable. If the unit does not power up, contact an authorized service representative.
    - **Wiring:** Cables running inside walls should have the appropriate markings to indicate compliance and listing by the UL, CSA or other standards required by the UL, CSA, NEC, or your local building code. Questions about cables inside of walls should be directed to a qualified custom installer, licensed electrician, or low-voltage contractor.
18. **RECORDING COPYRIGHT:** Recording of copyrighted material for other than personal use is illegal without permission of the copyright holder.
19. **NOTE TO CATV SYSTEM INSTALLER:** This reminder is provided to call the CATV system installer's attention to article 820-40 of the NEC, ANSI/NFPA 70, which provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building as close to the point of cable entry as practical.
20. **FCC INFORMATION FOR USER:**
    - **CAUTION:** Any changes or modifications not expressly approved by Cary Audio Design could void the user's authority to operate the equipment.

    - **NOTE:** This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules.
    - These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates and can radiate radio frequency energy, and if not installed and used in accordance with the instructions it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
        - Reorient or relocate the receiving antenna.
        - Increase the separation between the equipment and receiver.
        - Connect the equipment into an outlet on a circuit different from where the receiver is connected.
21. **OUTDOOR ANTENNA INSTALLATION/SAFE ANTENNA AND CABLE CONNECTION:**
    - If an outside antenna or cable system is connected to the equipment, be sure the antenna or cable system is grounded in order to provide protection against built-up static charges and voltage surges. Article 810 of the National Electrical Code, ANSI/NFPA 70 (in Canada, Part 1 of the Canadian Electrical Code) provides information regarding proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes and requirements for the grounding electrode.


ANTENNA
ANTENNA LEAD IN WIRE
GROUND CLAMP
ANTENNA DISCHARGE UNIT (NEC SECTION 810-20)
ELECTRIC SERVICE EQUIPMENT
GROUNDING CONDUCTORS (NEC SECTION 810-21)
GROUND CLAMPS
POWER SERVICE GROUNDING ELECTRODE SYSTEM (NEC ART 250, PART H)
NEC – NATIONAL ELECTRICAL CODE

outside antenna system should be located well away from power lines, electric light or power circuits and where it will never come into contact with these power sources if it should happen to fall. When installing an outside antenna, take extreme care to avoid touching power lines, circuits and other power sources as this could be fatal. Because of the hazards involved, antenna installation should be left to a professional.

INTRODUCTION

It took over three years of painstaking research, engineering, listening, and refining, before Cary was ready to release the original PH 302. The result was a phono stage with incredible dynamic range and clarity that was in a class of its own. This new PH 302 MkII version adds to this design an adjustable range of loading options to the moving coil inputs to make matching to any cartridge a snap. Check the instructions that are supplied with your cartridge for the recommended load setting. You can also try other settings to suit your needs.

The PH 302 MkII is a vacuum tube design utilizing four 6SL7 dual triodes. The RIAA equalization curve is derived from a passive RC circuit located between the two gain stages. The PH 302 MkII is supplied with a regulated power supply to ensure an extremely quiet operation. The MC section uses two very high quality step-up transformers. They provide enough gain for use with any MC cartridge and with an extremely low noise floor. It is perfectly matched to any of the high-end Cary integrated amplifiers or pre-amplifiers.

The PH 302 MkII is finished with the beauty and detail that Cary Audio Design is famous for. With its black chassis and black or silver anodized front plate, you know immediately it belongs in the Cary family of high-end audio products.

For the analog lover the PH 302 MkII is a magical blend of art and technology that will add to your music listening enjoyment hour after hour. Experience the PH 302 MkII, experience what vacuum tubes can do to low output moving coil playback. We believe it will change the way you listen to music forever.

SPECIFICATIONS

This section describes the basic specifications of the PH 302 MkII phono preamplifier at the time of printing. Specifications are subject to change without notice or obligation.

Circuit Type	Direct Coupled, Single-ended Class A
Gain, MM Phono Section	38 dB, using triode vacuum tubes
Gain, MC Phono Section	60 dB, using input transformers and triode vacuum tubes
Noise and Hum	-78 dB below full output
Input Impedance	MM - 47kΩ MC - Adjustable- 10Ω, 43Ω, 100Ω, 330Ω, 470Ω, 47kΩ
Output Impedance	660 Ω
Frequency Response	RIAA Curve + 0.5 dB, passive RIAA circuit design
Power Supply Design	Fully regulated power supply with 1 ea - R-Core transformer
Transformer(s)	200% Duty rating for long life and reserve energy
Vacuum Tube Complement	2 ea - 6SL7 Head Amp 2 ea - 6SL7 RIAA EQ & Amp Gain Stage and buffer 1 ea - 5AR4 Vacuum Tube Rectifier
Resistors	1% Metal Film
Power Supply Capacitors	6 ea - 47 µFd @ 350 VDC capacitors
AC Cord	3 Conductor, Detachable
AC Power Requirements	100, 117 or 234 Volts @ 50/60 Hz, set by market
Power Consumption	25 Watts
Warm-Up Time	5 Minutes
Break-In Time	100 hours of music playing time
Finish chassis	Black or silver anodized aluminum faceplate, semi gloss black steel
Weight	22 lbs. (10 kg.)
Dimensions	4" H x 17" W x 13" D (~10 x 43 x 33 cm)

FEATURES

Front Panel

POWER SWITCH	On/off toggle switch
MM/MC SWITCH	Toggle to change from MM to MC
MUTE/OPERATE SWITCH	Mutes output of preamplifier
POWER LED	Indicates AC power ON
OPERATE LED	Indicates ready for operation
MUTE LED	Indicates mute mode

Rear Apron

MM	RCA jacks for MM cartridge input
MC	RCA jacks for MC cartridge input
MC Impedance Selector	6 position switch to select input impedance for MC cartridges
OUTPUT	RCA jacks for preamplifier or integrated amplifier
GROUND	Turntable ground
GROUND "FLOAT" SWITCH	Lifts AC ground to eliminate ground loop
AC FUSE	1 amp slow blow protections fuse
AC INLET	3 conductor, detachable

INSTALLATION

This section describes the unpacking and installation procedures for your new component.

UNPACKING

All Cary Audio Design shipping containers have been specially designed to protect their contents and special care has been taken to prevent damage under normal shipping conditions. Mishandling should be evident upon inspection of the shipping container. If shipping damage is found after visual inspection, take care not to destroy the evidence. If necessary, document the damage with photographs and contact the transport carrier immediately.

Carefully remove your new component from its packing carton and examine it closely for signs of shipping damage. We strongly recommend saving all original packing cartons to protect your component from damage should you wish to store it or ship it for after-sales service.

WARRANTY CARD

IN THE USA: If you are the original purchaser of a new unit from an AUTHORIZED CARY AUDIO DESIGN DEALER, please fill out the enclosed warranty registration card and return it to Cary Audio Design within 15 days of your purchase. Cary Audio Design also suggests that you keep your original packing cartons in case you ever need to ship the unit when moving to a new home. Warranty restrictions apply. Consult the warranty section at the end of this manual for details. Please be certain to keep a copy of the original sales receipt from your AUTHORIZED CARY AUDIO DESIGN DEALER to validate the warranty if ever needed. The warranty is for the original purchaser only and does not transfer to any subsequent owner.

OUTSIDE THE USA: Your local Authorized Cary Audio Design Distributor will make his own warranty policy for your country. Please check with them for the terms of warranty for your new amplifier.

BREAK-IN PERIOD

The tubes and capacitors take approximately 100 hours of music playing to fully settle in for peak performance. The PH 302 MkII will seem sterile or thin sounding right out of the box. After the first couple of hours you will notice increased depth and tighter bass. This break-in period defies all engineering theory, but is true with most audio amplifiers.

SERVICE AND CARE

The chassis may be cleaned with a soft towel and Windex® (or a similar window cleaner). Spray it on the cleaning cloth to moisten it, not on the component. Do not use solvents or harsh chemicals as they may remove the labels from the chassis. The frequency and need of cleaning will be governed by operating environmental conditions. Avoid letting the component become dusty or wet. A 'feather duster' type cleaner will also work well for cleaning the component.

FACTORY SERVICE

Careful consideration has been given to the design of this product to keep maintenance problems to a minimum. If problems arise, refer to the trouble-shooting guide at the end of this manual. If the problem is not easily solved, we suggest that you contact our Customer Service Department by phone at (919) 355-0010, 1–5 pm Eastern Standard Time, to describe your problem in detail. Do not return the component to the factory without a Return Authorization Number **(RA)** from the Customer Service Department.

Cary Audio Design assumes no responsibility if the transportation company refuses to pay a damage claim due to your improper packing or lack of insurance should the unit be lost in shipment. We strongly suggest using the original packing cartons for shipping any Cary Audio Design component.

NON-WARRANTY REPAIRS

Cary Audio Design will provide repair service for its products charging on a time and expense basis. At this time, the standard non warranty service bench fee is $125 with all parts used for repair charged extra. This may change with time and is not a quote for service. Please call us at 919-355-0010 for more information about out of warranty service and repair fees.

UNITED STATES LIMITED WARRANTY _____

Cary Audio Design warrants to the original United States purchaser for use in the United States that Cary Audio Design vacuum tube or solid-state power amplifiers surround sound processors, preamplifiers, or music servers shall be free from defects in parts or workmanship for three years from the date of the original purchase. Vacuum tubes, if any are used in the component, are offered a 90-day (from purchase date) exchange policy against defects with the exception of the CAVT 300B vacuum tube that has a one-year (from purchase date) exchange policy. Any digital drive design, whether a Cary Audio Design CD or SACD player, Cary Cinema DVD player, or Cary Music Server has a limited one-year parts and labor warranty against defects in manufacturing. This is a limited warranty offered only to the original purchaser and does not transfer.

During the limited warranty period, Cary Audio Design or an authorized Cary Audio Design service facility will provide free of charge both parts and labor necessary to correct any defects in material or workmanship.

To obtain such warranty service, the original purchaser must complete and send in the Warranty Registration Card within 15 days of purchase.

WARRANTY DISCLAIMER

Except for the express warranties stated herein, Cary Audio Design disclaims all other warranties including, without limitation, all implied warranties of merchantability and fitness for a particular purpose. The foregoing constitutes Cary Audio Design's entire obligation with respect to this product, and the original purchaser and any user or owner shall have no other claim for incidental or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation and exclusion may not apply to you. This warranty gives legal rights and you may also have other rights, which vary from state to state.

Proper maintenance, repair and use are important to obtain performance from this product. Therefore, please carefully read the Operating Manual. This warranty does not apply to any defect that Cary Audio Design in its sole discretion determines was caused by any of the following:

- Improper maintenance or repair, including the installation of parts or accessories not conforming to the quality and the specifications of the original parts
- Misuse, abuse, neglect or improper installation
- Accidental or incidental damage

EXCLUSIVE REMEDY

Notwithstanding the foregoing, the purchaser's exclusive remedy for any breach of warranty, express or implied, is limited to the repair or replacement of the defective unit or the refund of the purchase price, at the option of Cary Audio Design. Under no circumstances is Cary Audio Design liable for incidental or consequential damages. Any implied warranties imposed by law terminate one year from the date of purchase.

INTERNATIONAL PURCHASERS (EXPORT MARKETS)

Cary Audio Design warrants its merchandise to purchasers within the United States exclusively for use within the United States of America. It provides no other warranties, expressed or implied. If you are living outside the USA, please consult your local dealer or distributor to determine the details of your local warranty.

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